MULTIMEDIA UNIVERSITY®

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2015/2016

HPT2021 INTRODUCTION TO HUMAN PATHOLOGY

(All Sections / Groups)

1 JUNE 2016
2.30 p.m. - 4.30 p.m.
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of **9** pages including cover page with **6** questions only.
2. For **Question 1 to 4, answer ALL.** For **Question 5 to 6, answer only ONE.** All questions carry equal marks and the distribution of the marks for each question is given.
3. Please write all your answers in the space provided in this question paper.

QUESTION 1

Compare and contrast the following terms:

(a) Acute vs chronic **[1 mark]**

(b) Labile cell vs stable cell **[1 mark]**

(c) Regeneration vs healing **[1 mark]**

(d) Thrombus vs embolus **[1 mark]**

(e) Overt pathogens vs opportunistic pathogens **[1 mark]**

Continued...

(f) Adenoma vs carcinoma **[1 mark]**

(g) Proto-oncogenes vs tumor suppressor genes **[2 marks]**

(h) Innate immunity vs adaptive immunity **[2 marks]**

Continued...

QUESTION 2

(a) What is the goal of cellular adaptation? **[1 mark]**

(b) List and briefly describe the FOUR general, major types of cellular and tissue responses to stress. **[2 marks]**

(c) What are caspases and how do they act? **[2 marks]**

(d) All cells in a multi-cellular organism undergo growth and death. Cell death occurs via two different processes- necrosis and apoptosis. Compare and contrast the two processes. **[3 marks]**

(e) What happens when apoptosis goes wrong? **[2 marks]**

Continued...

QUESTION 3

(a) What causes chronic inflammation? Name at least TWO causes. **[1 mark]**

(b) In addition to containing or neutralizing an injurious process, the inflammatory response is also thought to promote repair at sites of tissue damage. However, this response can also cause tissue damage and contribute to the pathogenesis of a number of diseases. Name at least FOUR diseases that are caused by inflammation. **[2 marks]**

(c) What happen when inflammation goes wrong? **[2 marks]**

(d) Name FOUR etiologies of edema. **[2 marks]**

(e) The vascular endothelium possesses a number important prothrombotic and antithrombotic factors, for the control of hemostasis and thrombosis. Name the factors that contribute to the following properties: (one for each category) **[3 marks]**

Anticoagulant :

Procoagulant :

Profibrinolytic :

Antifibrinolytic :

Platelet inhibitory :

Platelet activating :

Continued...

QUESTION 4

(a) Briefly describe the immune mechanism of FOUR types of hypersensitivities. **[2 marks]**

(b) For each type of the hypersensitivity, give ONE example for each disease. **[2 marks]**

(c) Explain briefly SIX types of alterations that promote tumor development. **[6 marks]**

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Please answer either Question 5 OR Question 6 only.

QUESTION 5

(a) Smallpox was a good candidate for eradication. What are the reasons? **[2 marks]**

(b) What are the features / mechanisms used by microbial agents to facilitate their pathogenicity? Describe at least FOUR categories of features/mechanisms. Name ONE specific example of virulence factor for each category. **[4 marks]**

(c) Name ONE disease that is due to mutations in: **[4 marks]**

- Enzymatic proteins :
- Structural proteins :
- Receptor proteins :
- Cell growth regulatory proteins :
- Triplet repeat :
- Mitochondrial genes :
- Number of chromosomes :
- Structure of chromosomes :

Continued...

QUESTION 6

(a) What is farmer's lung? If you were asked to give advices to your uncle, who owns a big farm and a number of workers, ways to prevent his workers from getting the disease, what would you suggest? (Give at least TWO suggestions) **[2 marks]**

(b) What are the variables that determine potential for lung damage? **[1 mark]**

(c) Lead poisoning is a serious and sometimes fatal condition. It occurs when lead builds up in the body. (i) What are the common sources of lead in our daily life? (ii) What type of damages does it caused to our body? (iii) Who is at the highest risk for health problems from lead poisoning? **[3 marks]**

(d) Name the cause for the following diseases: **[2 marks]**

Scurvy :

Kwashiorkor :

Xerophthalmia :

Pellagra :

Marasmus :

Osteomalacia :

Hypercalcaemia :

Megaloblastic anemia :

Continued...

(e) From the 1860s to the turn of the 20th century, people whose plant consumption was limited to the polished white rice would often come down with weakness, pain, weight loss, difficulty walking, and emotional disturbances. Beriberi became one of the leading causes of mortality in the region. In the 1880s, a doctor named Christiaan Eijkman began researching the causes of this epidemic, and initially believed that the condition was caused by a bacterial infection. However, after years of study, he came to the conclusion that "white rice is poisonous."

Why was polished white rice "poisonous" and resulted in beriberi? **[2 marks]**

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